

DETAILED ACTION

Response to Amendment

1. This communication is in response to the Amendment filed 15 October 2010.
2. Claims 1-8, 12, 14-25, 29, 31-35, 37-39, 41, 42 and 46-50 are pending. In the Amendment filed 15 October 2010, claims 1-8, 12, 14-25, 29-35, 38, 39, 42 and 46-50 are amended and claims 9-11, 13, 26-28, 30, 36, 40 and 43-45 are cancelled.
3. As a result of the Amendment filed 15 October 2010 and the Examiner's Amendment stated below, claims 1-8, 12, 14-25, 29, 31-35, 37-39, 41, 42 and 46-50 (renumbered as 1-37) are allowed.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 October 2010 has been entered.

Claim Clarifications - 35 USC § 101

5. The examiner interprets the term 'computer-readable storage medium' as being limited to statutory embodiments of a medium, such that the claim clearly falls within a statutory class of invention as required under the terms of 35 U.S.C. 101.

Examiner Amendment

6. Authorization for this examiner's amendment, listed below, was given in a telephone interview with Michael Abramson (Reg. No. 60,320) on 3 December 2010.

In the Claims:

Please amend claims 39, 41 and 49 as follows:

39. (Currently Amended) A computer-readable storage medium containing executable program instructions executed by a processor, comprising:

program instructions that scan at least one volume information block referencing each root of a plurality of persistent consistency point images (PCPIs) comprising a particular tree structure stored on a destination storage system;

program instructions that generate, by a management client, an index of qtrees in response to scanning the volume information block referencing each root of the plurality of PCPIs, each qtree comprising one or more versions created at different creation times;

program instructions that select, by a query issued at the management client, a particular qtree to view of the index of qtrees; and

program instructions that display, on a screen of the management client in response to the query, each version of the particular qtree created at the different points creation times.

41. (Currently Amended) The computer-readable storage medium as set forth in claim 39 further comprising program instruction that format information into a network data management protocol (NDMP).

49. (Currently Amended) A computer implemented method, comprising:

transferring a plurality of persistent consistency point images (PCPIs) from a plurality of source storage systems to at least one destination storage system;

scanning at least one volume information block referencing each root of the plurality of PCPIs comprising a particular directory tree to create an index of data structures of the at least one destination storage system, each data structure comprising a plurality of qtree versions created at different creation times;

selecting a particular data structure to view;

in response to the selection, querying the destination storage system, and in response to the querying, returning all qtree versions created at the different creation times for the particular data structure; and

selecting a particular qtree from all the returned qtree versions created at the different creation times to restore.

Reasons for Allowance

7. The following is an examiner's statement of reasons for allowance:

In the Examiner's Final Office Action dated 19 July 2010, claims 1, 2, 6, 15-19, 31-35, 38, 49 and 50 were rejected under 35 USC 103 based primarily on US PGPub

2005/0216788 to Mani-Meitav et al and US Patent 7,529,778 to Dewey et al; claims 3-5, 20-23, 37 and 41 were rejected under 35 USC 103 based primarily on US PGPub 2005/0216788 to Mani-Meitav et al, US Patent 7,529,778 to Dewey et al and US Patent No 6,434,681 to Armangau; claims 7, 8, 12, 14, 24, 25, 29, 42 and 46-48 were rejected under 35 USC 103 based primarily on US PGPub 2005/0216788 to Mani-Meitav et al, US Patent 7,529,778 to Dewey et al and US PGPub 2003/0131207 to Arakawa; claims 42 and 46-48 were rejected under 35 USC 103 based primarily on US PGPub 2005/0216788 to Mani-Meitav et al, US Patent 7,529,778 to Dewey et al and US PGPub 2007/0220142 to Moorer et al.

The claimed invention is directed towards systems, methods and a medium for indexing and manipulating backup data by scanning through the root of each PCPI comprising a particular directory tree to create an index associated with that particular directory tree. The systems, methods and medium generate an index of those PCPIs associated with a particular directory tree spanning multiple points-in-time rather than generating an index of every PCPI making up a single point-in-time image of the entire active file system. When information on a particular directory is requested, the full range of those PCPIs containing that particular directory may be located and read to generate an index associated with that particular directory tree.

The prior art of record, Mani-Meitav, Dewey, Armangau and Arakawa, do not show, teach or suggest the features of, **accessing data identifiers related to the backup data organized in a tree structure and representing a plurality of persistent consistency point images (PCPIs) of the data, each associated with**

associated information related to a creation time; scanning the tree structure through at least one volume information block configured to reference each root of each PCPIs comprising the tree structure to generate an index of directories, files, or qtrees created at different points in time; organizing the data identifiers to enable the data to be displayed on a display screen of the management client according to the directory, the file, or the qtree as stated in each of the independent claims in combination with the other claimed features.

Applicant's arguments, filed 15 October 2010, with respect to the prior art rejections of the claims have been fully considered and are persuasive.

An updated search for prior art on the EAST database and on domains (NPL-ACM, Google) has been conducted. The prior art searched and investigated in the database and domains does not fairly teach or suggest the teaching of the claimed subject matter as described above and reflected by the combined elements in independent claims 1, 18, 35, 39, 42, 49 and 50. Dependent claims 2-8, 12, 14-17, 19, 20, 22-25, 29, 31-34, 37, 38, 41 and 46-48 are deemed allowable for the reasons stated above in regards to the independent claims.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY LOVEL whose telephone number is (571)272-2750. The examiner can normally be reached on 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kimberly Lovel
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